



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,729	05/24/2006	Dan Shang	CN03 0056 US1	6461
65913	7550	10/29/2008		
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131				
EXAMINER				
SARWAR, BABAR				
ART UNIT		PAPER NUMBER		
2617				
NOTIFICATION DATE		DELIVERY MODE		
10/29/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary

Application No.

10/580,729

Applicant(s)

SHANG ET AL.

Examiner

BABAR SARWAR

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-18 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 24 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/CIS)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10, and 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilhousen et al. (US 6546058 B1) in view of Haartsen et al. (US 6574266 B1), hereinafter referenced as Gil and Haart.

Consider **claim 1**, Gil teaches a method to be performed by a user equipment (mobile unit), for the user equipment in a wireless communication mode to perform cell handover (Abstract, figs. 1, 3). Gil discloses that detecting downlink signals of the active cell in which said user equipment is camping and its adjacent cells (Col. 2 lines 11-15, figs. 1 and 3, where Gil teaches active set, candidate set and neighbor set). Gil further discloses that judging whether there exists a suitable cell whose link performance is a predefined value higher than that of the active cell (Col. 2 lines 15-19), according to the detecting result, and sending a detection report message to a network system to start a judging procedure of the network system if there exists the suitable cell (Col. 2 lines 11-57, Col. 13 lines 6-67, Col. 14 lines 1-67, and Col. 15 lines 22, figs. 1-3).

Gil fails to disclose that the judging procedure decides whether the user equipment and another user equipment in P2P communication can handover into the

suitable cell to continue P2P communication. Haart teaches that the judging procedure decides whether user equipment (240, remote terminal) and the another user equipment (250, remote terminal) in P2P communication (Abstract, Col. 3 lines 44-46, Col. 8 lines 18-23, exhibited in figs. 5, 7A-D, where Haart teaches the direct mode communication) can handover into said suitable cell (base station 211) to continue P2P (Abstract, Col. 12 lines 28-49, and exhibited in figs. 7D).

Therefore it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify Gil by specifically providing the judging procedure deciding whether the user equipment and the another user equipment in P2P communication can handover into the suitable cell to continue P2P communication, as taught by Haart, for the purpose of enhancing the performance of the network by having an uninterrupted communication between remote terminals, as discussed by Haart (col. 5 lines 24-36).

Consider **claim 2**, Gil and Haart disclose everything claimed as implemented above (see claim 1). In addition, the combination teaches that judging whether there exist candidate cells whose link performance can meet the requirement for communication quality in said adjacent cells, according to the detecting result of downlink signals and judging whether there exists the suitable cell in the candidate cells if there exist the candidate cells. Gil specifically teaches that judging whether there exist candidate cells whose link performance can meet the requirement for communication quality in said adjacent cells, according to the detecting result of downlink signals and judging whether there exists the suitable cell in the candidate cells if there exist the

candidate cells (Col. 2 lines 11-57, Col. 13 lines 6-67, Col. 14 lines 1-67, and Col. 15 lines 22, figs. 1-3).

Consider **claim 3**, Gil and Haart disclose everything claimed as implemented above (see claim 2). In addition, the combination teaches that sending a report message about candidate cells to said network system to report said decided candidate cells to said network system. Gil specifically discloses that sending a report message about candidate cells to the network system to report the decided candidate cells to the network system (Col. 2 lines 11-57, Col. 13 lines 6-67, Col. 14 lines 1-67, and Col. 15 lines 22, figs. 1-3).

Consider **claim 4**, Gil and Haart disclose everything claimed as implemented above (see claim 1). In addition, the combination teaches that receiving a cell handover command from network system and establishing a P2P connection with the another UE in the suitable cell. Haart specifically discloses that receiving a cell handover command from network system and establishing a P2P connection with the another UE in the suitable cell (Abstract, Col. 12 lines 28-49, and exhibited in figs. 7D).

Therefore it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify Gil by specifically providing receiving a cell handover command from network system and establishing a P2P connection with the another UE in the suitable cell, as taught by Haart, for the purpose of enhancing the performance of the communication by reducing the set up time as discussed by Haart (col. 5 lines 24-36).

Consider **claim 5**, Gil and Haart disclose everything claimed as implemented above (see claim 4). In addition, the combination teaches that releasing the P2P connection in the active cell and sending a message for completing cell handover to the network system. Haart specifically discloses that that releasing the P2P connection in the active cell and sending a message for completing cell handover to the network system (Abstract, Col. 12 lines 28-49, and exhibited in figs. 7D, where Haart discloses base stations taking over control when the remote terminals 240, 250 listen to the broadcast of channel of the new base station and establish connection with the new base station i.e. peer-to-peer connection is released in the active cell).

Therefore it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify Gil by specifically providing that releasing the P2P connection in the active cell and sending a message for completing cell handover to the network system, as taught by Haart, for the purpose of enhancing the performance of the communication by releasing the resources of the network to be reused by other remote terminals as discussed by Haart (col. 5 lines 24-36).

Consider **claim 6**, Gil and Haart disclose everything claimed as implemented above (see claim 1). In addition, the combination teaches that receiving a detection control message from the network system and sending a detection report message about the link performance of the active cell to the network system, according to the detection control message. Gil specifically discloses that receiving a detection control message from the network system and sending a detection report message about the link performance of the active cell to the network system, according to the detection

control message (Col. 2 lines 11-57, Col. 13 lines 6-67, Col. 14 lines 1-67, and Col. 15 lines 22, figs. 1-3).

Consider **claim 7**, Gil teaches a method to be performed by a network system, for two UEs (fig. 1 where Gil discloses plurality of mobile units) in communication mode to perform cell handover (Abstract, figs. 1, 3). Gil further teaches that receiving a detection report message from any UE of the two UEs, indicating that said UE detects there exists a suitable cell in the adjacent cells of its active cell (Col. 2 lines 11-15, figs. 1 and 3, where Gil teaches active set, candidate set and neighbor set). Gil discloses that the link performance of said suitable cell is a predefined value higher than that of its active cell (Col. 2 lines 11-57, Col. 13 lines 6-67, Col. 14 lines 1-67, and Col. 15 lines 22, figs. 1-3).

Gil fails to disclose that the starting a judging procedure to decide whether said two UEs can handover into said suitable cell to continue P2P communication. Haart teaches that starting a judging procedure to decide whether said two UEs (240, 250 remote terminals) can handover into said suitable cell (base station 211) to continue P2P communication (Abstract, Col. 3 lines 44-46, Col. 8 lines 18-23, Col. 12 lines 28-49, and exhibited in figs. 5, 7A-D, where Haart teaches the direct mode communication)

Therefore it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify Gil by specifically providing the start of a judging procedure to decide whether said two UEs can handover into said suitable cell to continue P2P communication, as taught by Haart, for the purpose of enhancing the

performance of the network by having an uninterrupted communication between remote terminals as discussed by Haart (col. 5 lines 24-36).

Consider **claim 8**, Gil and Haart disclose everything claimed as implemented above (see claim 7). In addition, the claim 8 is interpreted and thus rejected for the same reasons applied in the rejection of claim 2.

Consider **claim 9**, Gil and Haart disclose everything claimed as implemented above (see claim 8). In addition, the combination teaches that establishing signaling link between said two UEs if the requirement for communication quality is met and sending a cell handover command to said two UEs so that said two UEs can establish P2P connection in said suitable cell. Haart specifically teaches that establishing signaling link between said two UEs if the requirement for communication quality is met and sending a cell handover command to said two UEs so that said two UEs can establish P2P connection in said suitable cell (Col. 12 lines 28-49, and exhibited in figs. 5, 7A-D).

Therefore it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify Gil by specifically providing establishing signaling link between said two UEs if the requirement for communication quality is met and sending a cell handover command to said two UEs so that said two UEs can establish P2P connection in said suitable cell, as taught by Haart, for the purpose of enhancing the performance of the communication by achieving the required communication quality as discussed by Haart (col. 5 lines 24-36).

Consider **claim 10**, Gil and Haart disclose everything claimed as implemented above (see claim 8). Gil teaches that checking the link performance of said another UE

in said active cell if the requirement for communication quality can't be met and judging whether the link performance of said two UEs in said active cell can meet the requirement for communication quality (Col. 2 lines 11-57, Col. 13 lines 6-67, Col. 14 lines 1-67, and Col. 15 lines 22, figs. 1-3).

Gil does not specifically disclose that sending a command for maintaining P2P communication to said two UEs so that said two UEs can continue P2P communication in said active cell if the link performance of said two UEs in said active cell both can meet the requirement for communication quality. Haart teaches that sending a command for maintaining P2P communication to said two UEs so that said two UEs can continue P2P communication in said active cell if the link performance of said two UEs in said active cell both can meet the requirement for communication quality (Col. 10 lines 54-67, Col. 11 lines 1-67, and Col. 12 lines 1-49, and exhibited in figs. 5, 7A-D, where Haart teaches remote terminals handing over to adjacent cells based on communication quality requirement i.e. they will not handover to the adjacent cell if communication quality requirement is not met or is poor).

Therefore it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify Gil by specifically providing that sending a command for maintaining P2P communication to said two UEs so that said two UEs can continue P2P communication in said active cell if the link performance of said two UEs in said active cell both can meet the requirement for communication quality, as taught by Haart, for the purpose of enhancing the performance of the communication by achieving the required communication quality as discussed by Haart (col. 5 lines 24-36).

2. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Gilhousen et al. (US 6546058) in view of Haartsen et al. (US 6574266 B1), and further in view of Ranta et al. (US 2003/0144003), hereinafter referenced as Ranta.

Consider **claim 11**, Gil and Haart disclose everything claimed as implemented above (see claim 10). The combination fails to teach that sending a command for switching to conventional communication mode to said two UEs so that said two UEs can switch to conventional mode from P2P mode if the link performance of at least one of said two UEs in said active cell can't meet the requirement for communication quality. Ranta discloses that sending a command for switching to conventional communication mode to said two UEs (MSA, MSB) so that said two UEs can switch to conventional mode from P2P mode if the link performance of at least one of said two UEs in said active cell can't meet the requirement for communication quality (Abstract, Para 13, 23, 39, and 42, exhibited in figs. 1B, 4B and 5).

Therefore it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify Gil and Haart by specifically providing that sending a command for switching to conventional communication mode to said two UEs so that said two UEs can switch to conventional mode from P2P mode if the link performance of at least one of said two UEs in said active cell can't meet the requirement for communication quality, as taught by Ranta, for the purpose of enhancing the performance of the network by establishing and handling connections between mobile stations more efficiently by combining the properties of a cellular network and direct mode connections, as discussed by Ranta (para [0008]).

Consider **claim 12**, Gil and Haart disclose everything claimed as implemented above (see claim 10). In addition, Gil specifically teaches that sending a detection control message to said another UE, to request said another UE to send a detection report about the link performance of said active cell and receiving said detection report from said another UE and checking the link performance of said another UE in said active cell according to said detection report (Col. 2 lines 11-57, Col. 13 lines 6-67, Col. 14 lines 1-67, and Col. 15 lines 22, figs. 1-3, where Gil teaches plurality of mobile units monitoring pilot signals strength of base stations).

Consider **claim 13**, Gil and Haart disclose everything claimed as implemented above (see claim 7). In addition, Gil specifically teaches that receiving a report message about the candidate cells to any UE of said two UEs, the report message indicating that said UE detects the link performance of an adjacent cell of its active cell can meet the requirement for communication quality and marking each candidate cell of said UE according to the report message (Col. 2 lines 11-57, Col. 13 lines 6-67, Col. 14 lines 1-67, and Col. 15 lines 22, figs. 1-3, where Gil discloses plurality of mobile units monitoring pilot signals strength of base stations).

Consider **claim 14**, Gil discloses an UE (user equipment) comprising a detecting unit for detecting downlink signals of said UE in said active cell and its adjacent cells (Col. 2 lines 13-15, where Gil discloses mobile unit monitoring the pilot signal strength i.e. mobile unit does comprise a detecting unit), a judging unit for judging whether there exists a suitable cell whose link performance is a predefined value higher than that of said active cell (Col. 2 lines 15-19, where Gil teaches mobile unit monitoring pilot signal

of adjacent cells and if pilot signal strength in the adjacent cell exceeds the predetermined threshold, adding the adjacent cell to candidate set i.e. mobile does comprise a judging unit), and according to the detection result a sending unit, for sending a detection report message to a network system to start a judging procedure of said network system when there exists said suitable cell (Col. 2 lines 11-57, Col. 13 lines 6-67, Col. 14 lines 1-67, and Col. 15 lines 22, figs. 1-3, where Gil discloses mobile unit communicating a message to the first base station identifying the new base station i.e. mobile does comprise a sending unit)

Gil fails to specifically teach that the judging procedure decides whether the UE and another UE in P2P communication can handover into said suitable cell to continue P2P communication. Haart discloses that the judging procedure decides whether the UE and another UE in P2P communication can handover into said suitable cell to continue P2P communication (Abstract, Col. 12 lines 28-49, and exhibited in figs. 7D).

Therefore it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify Gil by specifically providing that the judging procedure decides whether the UE and another UE in P2P communication can handover into said suitable cell to continue P2P communication, as taught by Haart, for the purpose of enhancing the performance of the network by having an uninterrupted communication between remote terminals as discussed by Ranta (para [0008]).

Consider **claim 15**, Gil and Haart disclose everything claimed as implemented above (see claim 14). In addition, the combination teaches a receiving unit, for receiving a cell handover command from said network system and an establishing unit, for

establishing a P2P connection with said another UE in said suitable cell. Haart specifically discloses that a receiving unit, for receiving a cell handover command from said network system, an establishing unit, for establishing a P2P connection with said another UE in said suitable cell (Abstract, Col. 12 lines 28-49, and exhibited in figs. 7D, where Haart discloses that base stations send messages to the remote terminals instructing them to listen to broadcast channels of the new base stations and establishing the connection with the new base station i.e. remote terminals have receiving and establishing units).

Therefore it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify Gil by specifically providing a receiving unit, for receiving a cell handover command from said network system and an establishing unit, for establishing a P2P connection with said another UE in said suitable cell, as taught by Haart, for the purpose of enhancing the performance of the communication as discussed by Ranta (para [0008]).

Consider **claim 16**, Gil discloses a network system (Abstract, figs. 1-3) comprising a receiving unit (fig. 1, mobile units) for receiving a detection report message from any UE of said two UEs (fig. 1, mobile units), the detection report message indicating that said UE detects there exists a suitable cell in the adjacent cells of its active cell, and the link performance of said suitable cell is a predefined value higher than that of its active cell, (Col. 2 lines 11-57, Col. 13 lines 6-67, Col. 14 lines 1-67, and Col. 15 lines 22, figs. 1-3).

Gil fails to specifically teach that a judging unit for starting a judging procedure to decide whether said two UEs can handover into said suitable cell to continue P2P communication, wherein said judging unit is for judging whether the link performance of another UE of said two UEs in said suitable cell can meet the requirement for communication quality. Haart discloses that a judging unit for starting a judging procedure to decide whether said two UEs (240, 250, remote terminals) can handover into said suitable cell (fig. 7D, element 211) to continue P2P communication (Abstract, Col. 3 lines 44-46, Col. 8 lines 18-23), and the judging unit is for judging whether the link performance of another UE of said two UEs in said suitable cell can meet the requirement for communication quality (Abstract, Col. 12 lines 28-49, and exhibited in figs. 7D, where Gil teaches remote terminals handing over to adjacent cell based on the requirement of the communication quality i.e. remote terminals comprise a judging unit).

Therefore it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify Gil by specifically providing that a judging unit for starting a judging procedure to decide whether said two UEs can handover into said suitable cell to continue P2P communication, wherein said judging unit is for judging whether the link performance of another UE of said two UEs in said suitable cell can meet the requirement for communication quality, as taught by Haart, for the purpose of enhancing the performance of the network by having an uninterrupted communication between remote terminals as discussed by Ranta (para [0008]).

Consider **claim 17**, Gil and Haart disclose everything claimed as implemented above (see claim 16). In addition, the claim 17 is interpreted and thus rejected for the same reasons applied in the rejection of claim 9.

Consider **claim 18**, Gil and Haart disclose everything claimed as implemented above (see claim 17). In addition, the claim 18 is interpreted and thus rejected for the same reasons applied in the rejection of claim 10.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BABAR SARWAR whose telephone number is (571)270-5584. The examiner can normally be reached on MONDAY TO FRIDAY 09:30 A.M -05:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NICK CORSARO can be reached on (571)272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BABAR SARWAR/
Examiner, Art Unit 2617
October 16, 2008

/NICK CORSARO/
Supervisory Patent Examiner, Art
Unit 2617